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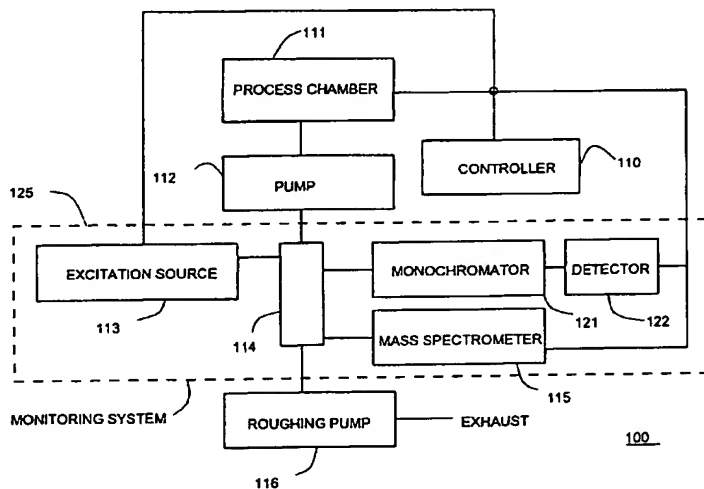
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[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR PROCESS MONITORING AND CONTROL



(57) Abstract: A method and apparatus for real-time monitoring of a gaseous environment during a semiconductor process. The method utilizes metastable electronic energy transfer to excite and ionize the chamber gaseous effluent and correlates the fluorescence signals from the excited species and mass spectroscopy analysis of the ions generated with the process status. In addition to the ability to produce excited species that fluoresce, the method has the ability to generate molecular ions from labile compounds, reduce fragmentation and operate at higher pressures than conventional ionization methods.

WO 03/065132 A2

WO 03/065132 A2



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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US CL : 250/281

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 250/281

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USPTO APS EAST**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2001/0055649 A1 (OGURE et al) 27 December 2001 (27.12.2001), para. 0192.	1,7-15,17-20,23,24, 26-32
A	US 5,248,636 A (DAVIS et al) 28 September 1993 (28.09.1993), see entire document.	1,7-15,17-20,23,24, 26-32,35-38
A,P	US 2002/0016077 A1 (HWANGBO et al) 07 February 2002 (07.02.2002), para. 0034.	1-41

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